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Van Buren, George H.

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New York

1917

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General Population and Insurance  
Mortality Compared

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A Discussion of the Mortality  
Experience of the Metropolitan  
Life Insurance Company, In-  
dustrial Department, and of  
the General Population—1915

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BY  
GEORGE H. VAN BUREN, SUPERVISOR

METROPOLITAN LIFE INSURANCE COMPANY  
NEW YORK  
1917

## General Population and Insurance Mortality Compared

The Statistical Bureau of the Metropolitan Life Insurance Company has made a comparison of the more important facts in the mortality experience of the Registration Area of the United States during the year 1915 and that for the Industrial policy-holders of the Company in the same year. To be sure, the two experiences are not altogether comparable. The age and sex distributions of the general public and of the Metropolitan Industrial policy-holders differ somewhat. The fact that more than half of the general population lives in rural communities while the Industrial policy-holders are located chiefly in the more congested cities also affects the comparison. There are, nevertheless, many very significant agreements between the two sets of death rates. Each is based upon a large number of deaths throughout the country which have been studied with great care and precision. That the analysis shows a similar trend in the mortality from many of the most prevalent causes of death is indeed important. It provides for the two largest vital statistics offices of the country very good evidence that the conclusions of each concerning the mortality from the more serious diseases are supported by those of the other.

### A Lower Death Rate

There were 909,155 deaths in the Registration Area during 1915 and the death rate was 13.5 per 1,000 estimated population as compared with 13.6 for the preceding year. There were 109,311 deaths of Metropolitan Industrial premium-paying policy-holders in 1915, equivalent to a death rate of 11.3 per 1,000 exposed. The insurance experience is based on 9,665,699 estimated lives, which is more than one-seventh of the estimated total population in the Registration Area. The death rate of the Registration Area in 1915 was the lowest in its history and the same is true of the mortality among the Metropolitan policy-holders. Among the latter a lower death rate than

would prevail for the general population is to be expected for several reasons. The principal one is that there are no policy-holders under one year of age—the age when the mortality is highest. Furthermore, the proportion of elderly persons among the premium-paying insured is much lower than among the population as a whole. These conditions are only partially offset by the fact that the policy-holders of the Company are not as favored by the more healthful conditions of rural life as is the general population.

#### **Remarkable Reductions in the Death Rates for Some of the Most Prevalent Epidemic Diseases**

Both the general mortality report and the experience of the Metropolitan show that there were very material decreases in the death rates for typhoid fever, measles, scarlet fever, whooping cough and diphtheria. For these diseases the mortality during 1915 in the Registration Area was not only lower than for the preceding year, but was absolutely the lowest since the Census Bureau began the publication of its annual reports in 1900. The single exception is whooping cough, for which in the year 1904 the death rate was a little lower than in 1915. In 1915 among Industrial policy-holders also, the mortality from these epidemic diseases reached the minimum during the recorded experience of the insurance company.

#### **Other Important Causes of Death Show Decreased Death Rates**

There was a small decrease in the death rate for tuberculosis (all forms) for 1915 as compared with 1914 in the Registration Area, and a considerable drop in the mortality from this cause among the Company's policy-holders. In the Registration Area during the five-year period 1911 to 1915 the mortality from tuberculous diseases has dropped from 158.9 per 100,000 population to 145.8. That of the Industrial policy-holders has fallen from 224.6 to 197.8 in the same period, a decrease of nearly 12 per cent. For both experiences the decline has been continuous during this time.

A gratifying decrease to those interested in child welfare work is shown for diarrheal diseases of children in the Registration Area. For these diseases, among which is included the deadly cholera infantum, the death rate dropped from 66 per 100,000 of population in 1914 to 59.5 in 1915. Decreasing mortality among both the population of the Registration Area

and the Industrial policy-holders is shown also for a number of other causes of death, among which are diseases incident to childbirth, accidents on steam railroads, street-car accidents and homicides.

#### **Where the Death Rate Is Going Up**

The findings of these two statistical offices are also in agreement as to many diseases which are becoming increasingly fatal in this country. One of these, quite evidently, is influenza. In 1915 the death rate for this disease in the Registration Area was 16 per 100,000 population; in 1914 it was only 9.1. There was also a very considerable increase among the Metropolitan Industrial policy-holders. Pellagra, which has been the subject of much research work by the United States Public Health Service, the Thompson-McFadden Commission, and other associations interested in public welfare work, increased from 2.3 to 4.2 in the Registration Area, and the death rates also show a substantial rise among the Metropolitan Industrial policy-holders. Both experiences point to a continuation of the steadily rising mortality due to diabetes.

Cancer continues to exact its heavy toll of human life. The death rate is increasing. The mortality in the Registration Area, however, is rising faster than among the Metropolitan policy-holders. For the former the Census figures show a rate of 74.3 in 1911, followed by a continuous rise throughout the quinquennium 1911-1915, until the maximum—81.1 per 100,000 population—is shown for 1915. The increase was 9.2 per cent. The Metropolitan experience shows a rise from 68 per 100,000 exposed in 1911 to 70.9 in 1915. The increase was 4.3 per cent. This is less than one-half that of the Area and was not continuous.

#### **The Automobile as an Instrument of Death**

An upward trend in the mortality from automobile accidents is, possibly, to be expected in view of the steadily increasing use of these vehicles. Nevertheless, the continuously climbing death rate is deserving of more than passing notice. In the Registration Area during the year 1915, 3,978 persons were killed by automobiles. In 1914 only 2,826 suffered death in this manner. The death rate rose from 4.3 per 100,000 population to 5.9, an increase of 37 per cent. Had there been seventy-five more deaths from automobile accidents in the

Registration Area, more people would have died in this manner than through surface cars, subway trains, elevated trains, bicycles and all horse-drawn vehicles combined. Among Metropolitan Industrial policy-holders 524 deaths were caused by automobile accidents during 1915 while but 495 were charged to all the other means just mentioned.

#### Points of Disagreement in the Two Investigations

There are two important differences in the results brought out by the two investigations. These relate to the mortality due to organic diseases of the heart and to Bright's disease. In the Registration Area the trend for heart diseases has been distinctly upward in recent years; the death rate jumped from 141.8 in 1914 to 147.1 in 1915. Among Metropolitan Industrial policy-holders, however, the mortality from these diseases has been decreasing, as shown by compilations covering the five-year period 1911 to 1915. A comparison of the rates for 1914 and 1915 shows that in marked contrast to the Registration Area with its very considerable rise in the death rate, there was an actual decrease in the death rate among the policy-holders from 138.1 per 100,000 exposed in 1914 to 136.7 in 1915.

While the mortality from Bright's disease seems to be increasing quite steadily in the Registration Area, the net result of the Metropolitan investigation shows that the death rate among its policy-holders for the last year of the five-year period 1911-1915 was practically the same as for the first year.

#### The Figures Prove the Utility of Life Saving Campaigns

After all, the most vitally important fact brought out by these investigations is the reduction of the total death rate—the death rate for all causes. It is significant, however, that this reduced mortality is even more marked for the working classes than for the general population. The Metropolitan Industrial mortality experience is a sensitive index of the health conditions of the American working classes. The reduced death rate undoubtedly reflects the influence of the life-saving campaigns carried on by the Federal, State and municipal health authorities, by the various private organizations for the study, prevention and treatment of diseases, and also by the life insurance companies. The extensive health education work of many of the insurance companies and the intensive

nursing care given by the Metropolitan Visiting Nurse Service have clearly exerted a favorable influence upon the health and longevity of policy-holders.

During the quinquennium 1911-1915 the death rate of the Registration Area showed a reduction of 4.9 per cent. (from 14.2 per 1,000 population in 1911 to 13.5 in 1915). During the same period the mortality among the Metropolitan Industrial policy-holders declined from 12.5 per 1,000 exposed to 11.3 in 1915, or 9.6 per cent.—nearly double the reduction shown for the Area. Between 1911 and 1915 only two States were added to the Registration Area—Virginia for 1913 and Kansas for 1914. The combined death rate of these two States is lower than that of the Registration Area, owing to the extremely low mortality shown for Kansas. With the addition of these two States, therefore, the death rate is lower than it would be without them. It is safe to say, therefore, that the mortality among the Metropolitan policy-holders during the five-year period has been reduced at double the rate, at least, of the general population. This is to be expected, for the favorable influence of all of the propagandas for preventing diseases and saving life is felt by this group to a greater extent than by the population at large. The life conservation movement has paid surprisingly good dividends.



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